

PATENT ABSTRACTS OF JAPAN

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(54) DISK CARTRIDGE, AND DISK CARTRIDGE LOADING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a disk cartridge and a method for loading the same capable of easily securing a loading recess when the disk cartridge is miniaturized and preventing the erroneous loading or insertion of the disk cartridge.

SOLUTION: This disk cartridge 1 is constructed in such a manner that a pair of loading recesses 11a and 11b are provided in the left and right side end parts of the insertion side of the disk cartridge 1, and one loading recess 11b is hidden by a closed shutter plate 7. When the disk cartridge 1 is inserted into a driving device 17 according to the disk cartridge loading method, the shutter plate 7 is opened by the shutter lock releasing member 9 of the driving device 17 to expose one loading recess 11b hidden by the shutter plate 7, then the pair of loading recesses 11a and 11b are chucked by the chucking rollers 20a and 20b of a loading arm 19, and the disk cartridge is pulled into a loading position.

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CLAIMS

[Claim(s)]

[Claim 1] The disk cartridge characterized by to be the insertion side of the above-mentioned disk cartridge, to equip with the loading crevice of the couple drawing in / for blowdown the disk case with which the disk which is a record medium was stored pivotable at the left right-hand-side edge of the above-mentioned disk case in the disk cartridge which has the shutter which enables closing motion of an accessible window part of the above-mentioned disk from the outside, and to conceal one of the above-mentioned loading crevices by the above-mentioned shutter of a closedown condition.

[Claim 2] The disk cartridge characterized by establishing the big notching side which cut aslant both the corners by the side of insertion of the above-mentioned disk cartridge in a disk cartridge according to claim 1.

[Claim 3] The disk case in which the disk which is a record medium was stored pivotable is equipped with the disk cartridge which has the shutter which enables closing motion of an accessible window part of the above-mentioned disk from the outside, and it is the insertion side of the above-mentioned disk cartridge. The left right-hand side edge of the above-mentioned disk case is equipped with the loading crevice of the couple drawing in / for blowdown. It is made to be concealed by the above-mentioned shutter of a closedown condition in one above-mentioned loading crevice. By the above-mentioned shutter being pushed by the shutter lock discharge member of the above-mentioned drive equipment, and being opened at the time of insertion to the drive equipment of the above-mentioned disk cartridge Immediately after having concealed while and exposing a loading crevice by the above-mentioned shutter The loading approach of the disk cartridge which chucking of the loading

crevice of a up Norikazu pair is carried out by the loading arm, and is characterized by the ability to perform actuation which draws the above-mentioned disk cartridge in a loading location.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention irradiates a light beam at the signal recording layer of an optical disk, and it is related with the loading approach of the disk cartridge which reproduced the information signal recorded on the signal recording layer by record or the signal recording layer in the information signal, and a disk cartridge. In detail One side is concealed by the shutter of a closedown condition among the loading crevices of the couple with which the left right-hand side edge by the side of insertion of a disk cartridge was equipped. A shutter is opened by the shutter disconnection member of drive equipment at the time of insertion to the drive equipment of a disk cartridge. Immediately after having concealed while and exposing a loading crevice by the shutter, chucking of the loading crevice of a couple is carried out by the loading arm, and it is drawn in a loading location in a disk cartridge.

[0002]

[Description of the Prior Art] Conventionally, the optical disk which reproduces the information recorded on this record medium as a record medium of various information, such as audio information and image information, using a light beam, or was recorded is proposed. Since the disk of one sheet can constitute, since it has big storage capacity as compared with record media, such as a magnetic tape, this kind of optical disk is widely applied the top where handling is easy as a record medium of audio information, image information, and the data further processed by computer.

[0003] Moreover, it is also expected that this seed disk is used, for example for portable devices, such as video camera equipment, since minor diameter-ization much more as the so-called disk cartridge stored in the cartridge case is expected. And the demand of a miniaturization becomes strong, even when it is miniaturized increasingly in recent years and video camera equipment also uses a disk cartridge.

[0004]

[Problem(s) to be Solved by the Invention] In the place, one pair of loading crevice for performing drawing in and blowdown of a disk cartridge compulsorily to drive equipment is established in the left right-hand side edge of a disk cartridge by disk cartridges, such as MD (mini disc) which is an optical disk.

[0005] Although it was advantageous to have been prepared in the left right-hand

side edge near the insertion side of a disk cartridge on that function as for this loading crevice, it had been restrained securing the loading crevice mentioned above by the miniaturization of a disk cartridge in the case of a configuration into which both the corners by the side of insertion of a disk cartridge are cut greatly aslant. [0006] Moreover, disk cartridges, such as MD which was mentioned above It will be held by the loading arm arranged at the drive equipment side if a disk cartridge is inserted in drive equipment. Although actuation which the actuation drawn in a loading location is interlocked with, and lock discharge of the shutter is carried out by the shutter lock discharge member, and is opened is performed, a disk cartridge In a conventional case, there was mistake loading or incorrect insertion of being drawn in a loading location also in the condition of having been closed without opening a shutter.

[0007] This invention was made in order to cancel a technical problem which was mentioned above, and it aims at acquiring the loading approach of the disk cartridge which can prevent mistake loading and incorrect insertion of a disk cartridge, and a disk cartridge while it can secure a loading crevice easily, even if it faces it the miniaturization of a disk cartridge.

[0008]

[Means for Solving the Problem] In order to attain the above-mentioned object, the disk cartridge by this invention is the insertion side of a disk cartridge, the left right-hand side edge of a disk case is equipped with the loading crevice of a couple, and one of loading crevices is concealed by the shutter of a closedown condition.

[0009] Moreover, by a shutter being pushed by the shutter lock discharge member of drive equipment, and being opened at the time of insertion to the drive equipment of a disk cartridge, immediately after having concealed while and exposing a loading crevice by the shutter, the loading crevice of a couple is held by the loading arm, and the loading approach of the disk cartridge by this invention is drawn in a loading location in a disk cartridge.

[0010] According to the disk cartridge mentioned above and its loading approach, a disk cartridge is inserted in drive equipment, when a shutter is opened by the shutter lock discharge member, one loading crevice is exposed, and actuation in which chucking of the loading crevice of a couple is carried out by the loading arm, and it is drawn in a loading location is performed here. Therefore, even if a disk cartridge is inserted in drive equipment, when a shutter is not opened, maintenance of the loading crevice by the loading arm becomes impossible, and drawing in in the loading location of a disk cartridge is not performed.

[0011]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of the loading approach of the disk cartridge by this invention and a disk cartridge is explained with reference to a drawing.

[0012] The perspective view in the shutter release condition that drawing 1 looked at

the disk cartridge from the top half side, and drawing 2 are the perspective views of the shutter release condition similarly seen from the bottom half side.

[0013] A sign 1 shows the whole disk cartridge and the cartridge case 2 is constituted by the coalesce type by RF joining in the plane of composition of the top half 3 and the bottom half 4. The disk 5 stored in the disk cartridge 1 is an optical disk, and shows the path of insertion of a disk cartridge 1 with the arrow-head marker 6.

[0014] In the disk cartridge 1 mentioned above, it has the shutter plate 7 which can be opened and closed at a slide ceremony for both sides of the cartridge case 2.

While a part of direction of a path of the top face of a disk 5 is discovered from the top half's 2 opening aperture 2a at the top-face side of a disk cartridge 1 by this shutter plate 7 being released In the underside side of a disk cartridge 1, a part of direction of a path of the underside (field in which read/writing is possible) of a disk 5 is discovered from the bottom half's 3 opening aperture 3a. In addition, in the underside side of a disk cartridge 1, the chucking plate 8 of a disk 5 comes to be discovered by release of the shutter plate 7.

[0015] This shutter plate 7 is locked by the closedown location by the lock member which is not illustrated in the state of a closedown. Moreover, by a disk cartridge 1 being inserted in drive equipment, a lock member is canceled by the shutter lock discharge member 9 (refer to drawing 3), and, as for the opening operation of the shutter plate 7, the shutter plate 7 is opened.

[0016] Moreover, the comparatively big notching sides 10 and 10 which cut both the corner aslant are formed by the insertion head side of a disk cartridge 1. While these notching sides 10 and 10 are identified as an insertion side of a disk cartridge 1, the miniaturization of a disk cartridge 1 is in drawing.

[0017] Now, by the insertion head side of a disk cartridge 1, one notching side 10a is adjoined and one loading crevice 11a is prepared in the bottom half's 4 side edge section. On the other hand, although the shutter plate 7 of a closedown location existed, while mentioned above the side edge section of the bottom half 4 who adjoins notching side 10b of another side in the side edge section of the bottom half 4 of the lower part of this shutter plate 7, and loading crevice 11b of another side is prepared in the location which is parallel to loading crevice 11a. When the closedown of the shutter plate 7 is carried out, it changes this loading crevice 11b into a concealment condition with the shutter plate 7.

[0018] In addition, the incorrect elimination prevention detection hole 13 which is interlocked with slide actuation of the incorrect elimination prevention plug 12 for not eliminating accidentally the recording information currently recorded on the disk 5 in the tooth back of a disk cartridge 1 and this incorrect elimination prevention plug 12, and is opened and closed is formed in the bottom half 4. A sign 14 is a discernment hole which identifies the specification of a disk cartridge 1.

[0019] Moreover, as for the slot-like locating hole 15 and this locating hole 15, the round hole-like locating hole 16 is formed [the bottom half 3 of a disk cartridge 1] in

the 1 side by the side of an insertion head at the insertion back end side of an opposite hand.

[0020] Drawing 3 is the top view which looked at the condition of having inserted the disk cartridge 1 in drive equipment, from the bottom half side.

[0021] The shutter lock discharge member 9 faced and mentioned above to the insertion opening 18 of a disk cartridge 1 is arranged at the drive equipments 17, such as a record regenerative apparatus. And draw a disk cartridge 1 in the back side of this shutter lock discharge member 9 in a loading location, and it operates, or the loading arm 19 for carrying out blowdown actuation is arranged in the ejection location. The loading arm 19 is equipped with the chucking rollers 20a and 20b of a left Uichi pair.

[0022] Next, loading actuation and blowdown actuation of a disk cartridge 1 are explained with reference to drawing 4 and drawing 5 with drawing 3.

[0023] [Loading actuation of a disk cartridge] Drawing 3 is in the condition which inserted the disk cartridge 1 in the insertion opening 18 of drive equipment 17 by the user, and the lock member to which the shutter plate 7 does not illustrate a disk cartridge 1 by the shutter lock discharge member 9 is canceled at this time.

[0024] By performing actuation which stuffs a disk cartridge 1 into the drive equipment 17 side here The shutter plate 7 runs against the shutter lock discharge member 9, and it retreats. The actuation which the shutter plate 7 begins to open is interlocked with, and the chucking rollers 20a and 20b of a loading arm 19 move to the left-and-right-laterals section from the notching sides 10a and 10b of a disk cartridge 1. Then, chucking of the chucking roller 20b of another side is carried out to loading crevice 11b of another side exposed from the shutter plate 7 at the same time chucking of the chucking roller 20a is carried out by one loading crevice 11a, as while shows drawing 4.

[0025] In this way, as the loading arm 19 which carried out chucking of the loading crevices 11a and 11b of a disk cartridge 1 carries out advance migration in the direction of loading and it is shown in drawing 5, a disk cartridge 1 is drawn in a loading location, and by the shutter lock discharge member 9, the shutter plate 7 will be thoroughly opened in a loading location, and will be in record/playback operating state of a disk cartridge 1.

[0026] [Blowdown actuation of a disk cartridge] A loading arm 19 carries out retreat migration in the direction of unloading from the loading location shown in drawing 5, and the disk cartridge 1 which record/playback actuation ended moves to the blowdown location shown in drawing 4. Here, while the loading crevices 11a and 11b on either side slip out of the chucking rollers 20a and 20b of a loading arm 19 by gathering and pulling out the edge of the disk cartridge 1 which projects from the insertion opening 18 of drive equipment 17, where the closedown of the shutter plate 7 was carried out and loading crevice 11b is concealed, a disk cartridge 1 can be taken out from drive equipment.

[0027] The closedown of the closedown actuation of the shutter plate 7 at the time of blowdown actuation is carried out by the spring member with which the disk cartridge 1 is equipped, or it makes the shutter plate 7 engage with the pin member prepared in the drive equipment 17 side; and may be made to carry out a closedown to it by migration of the eject direction of a disk cartridge 1.

[0028] As mentioned above, when according to this invention a disk cartridge 1 is inserted in drive equipment 17 and the shutter plate 7 is opened by the shutter lock discharge member 9, loading crevice 11b is exposed. Since the actuation in which chucking of the loading crevices 11a and 11b of a couple is carried out by the loading arm 19, and they are drawn in a loading location was made to be performed Even if a disk cartridge is inserted in drive equipment, when a shutter is not opened Chucking of the loading crevice by the loading arm can become impossible, can avoid drawing in in the loading location of a disk cartridge, and can prevent beforehand the so-called mistake loading and incorrect insertion of a disk cartridge.

[0029] Moreover, since the loading crevices 11a and 11b can be arranged in the location which retreats from the insertion side of a disk cartridge 1, and overlaps the shutter plate 7 and both the corners that are the free space by the side of insertion of a disk cartridge 1 are greatly excisable, much more miniaturization of disk cartridge 1 the very thing can be attained, and the miniaturization of product devices, such as for example, video camera equipment with which a disk cartridge 1 is used, can be enabled in connection with this.

[0030] Deformation implementation various by within the limits which is not limited to the gestalt of operation which mentioned above and was shown in the drawing, and does not deviate from the summary is possible for this invention.

[0031] Although this example explained the case where cut aslant both the corners by the side of insertion of a disk cartridge 1, and they were lacked, you may be making it a radii configuration mostly along with the disk in which the whole insertion side of a disk cartridge 1 is stored. The miniaturization of a disk cartridge 1 can be further attained by doing in this way.

[0032] Moreover, you may be making each loading crevice prepared one pair of right and left a configuration which is concealed with the shutter plate of a closedown condition.

[0033] Furthermore, it is widely applicable to a disk cartridge which has the shutter plate which can be opened and closed as a disk cartridge except an optical disk.

[0034]

[Effect of the Invention] As explained above, the disk cartridge of this invention equips the left right-hand side edge of a disk case with the loading crevice of a couple, and it is the insertion side of a disk cartridge and it is [when it is that one of loading crevices was concealed by the shutter of a closedown condition and a shutter is not opened, makes impossible chucking of the loading crevice by the loading arm, and] effective in the ability to prevent mistake loading and incorrect insertion of a

disk cartridge beforehand.

[0035] Moreover, by having established the big notching side which cut aslant both the corners by the side of insertion of a disk cartridge, much more miniaturization of a disk cartridge can be attained and the miniaturization of product devices, such as for example, video camera equipment with which a disk cartridge is used, can be enabled in connection with this.

[0036] According to the loading approach of the disk cartridge by this invention, by moreover, the thing for which a shutter is pushed by the shutter lock discharge member of drive equipment, and is opened at the time of insertion to the drive equipment of a disk cartridge Since the loading crevice of a couple is held by the loading arm and the disk cartridge was drawn in the loading location immediately after having concealed while and exposing a loading crevice by the shutter Even if a disk cartridge is inserted in drive equipment, when a shutter is not opened Mistake loading and incorrect insertion of a disk cartridge can be prevented without maintenance of the loading crevice by the loading arm becoming impossible, and drawing a disk cartridge in a loading location.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view which looked at the disk cartridge by this invention from the top half side.

[Drawing 2] It is the perspective view which similarly looked at the disk cartridge from the bottom half side.

[Drawing 3] It is the top view which looked at the condition of having inserted the disk cartridge in drive equipment, from the bottom half side.

[Drawing 4] Similarly a disk cartridge is the top view of the actuation by which chucking was carried out by the loading arm.

[Drawing 5] Similarly a disk cartridge is the top view of operation moved to the loading location.

[Description of Notations]

1 [-- A shutter plate, 9 / -- A shutter lock discharge member, 10a, 10b / -- A notching side, 11a, 11b / -- A loading crevice, 17 / -- Drive equipment, 18 / -- Insertion opening, 19 / -- A loading arm, 20a 20b / -- Chucking roller] -- A disk cartridge, 2 -- A cartridge case, 5 -- A disk, 7

拒絶理由通知書

特許出願の番号 特願 2004-140125
 起案日 平成19年 5月29日
 特許庁審査官 橋 均憲 3045 5Q00
 特許出願人代理人 小松 祐治(外 1名)様
 適用条文 第29条第1項、第29条第2項、第36条

この出願は、次の理由によって拒絶をすべきものである。これについて意見があれば、この通知書の発送の日から60日以内に意見書を提出して下さい。

理由

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記

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記 (引用文献等については引用文献等一覧参照)

・請求項1-9に対して引用文献1, 2により理由2, 3
備考:

引用文献1や引用文献2に記載されたディスクカートリッジには、シャッターが設けられた側面の反対側に位置する他方の側面に本願発明の「機能拡張用溝」に相当する溝が設けられており、そのような途中まで形成された溝を有するカートリッジを天地を逆にして挿入した場合、シャッター開放片によってカートリッジの挿入が防止されることとは明らかであり、本願の請求項1-9に新規性、進歩性はない。

拒絶の理由が新たに発見された場合には拒絶の理由が通知される。

1. 特開2002-56601号公報 filed 9/26/05
 2. 特開2001-222872号公報 filed 9/26/05

<先行技術文献調査結果の記録>

・調査した分野 IPC G11B.17/043
 ・先行技術文献

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